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Influences on travel planning and booking: A comparison between Web 2.0 technologies and word-of-mouth

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Abstract:
This paper contrasts the impact of Web 2.0 technologies in tourism-related decision-making against word-of-mouth persuasions by friends and family. We conducted an online survey using a structured sample (n = 653) of students from seven universities in Montreal and one in Toronto. Our study offers further evidence in support of earlier research stating that, despite the rising influence of Web 2.0 technologies, opinions and posted contents of friends and family members remain the strongest influence on travel planning, more so for respondents

with family residing outside Canada. Our results also show that the travel agency continues to remain a prime resource for gathering information and booking travel.

Keywords:
Content sharing, Social media, Travel booking, Travel planning, Word-of-mouth.

Résumé:
Ce document compare l'impact des technologies du Web 2.0 dans la prise de décisions liées au tourisme avec les persuasions de type bouche à oreille des amis et de la famille. Nous avons effectué un sondage en ligne en utilisant un échantillon structuré (n = 653) d'étudiants de sept universités à Montréal et une à Toronto. Notre étude offre d'autres preuves à l'appui de recherches antérieures indiquant qu'en dépit de l'influence croissante des technologies Web 2.0, les opinions et les contenus partagés des amis et de membres de la famille demeurent l'influence la plus forte sur la planification d'un voyage, encore plus pour les répondants dont la famille réside à l'extérieur du Canada. Nos résultats démontrent également que l'agence de voyage demeure une ressource privilégiée pour la collecte d'informations et la réservation d'un voyage.

Motsclés:
Partage de contenus, Médias sociaux, Réservation voyage, Planification voyage, Bouche à oreille.

INTRODUCTION

This paper contrasts the impact of Web 2.0 technologies in trip planning against the conventional word-of-mouth persuasions by friends and family. The buying process of trip planning starts with a search for information, which is usually conducted internally rather than through outside sources. "Many times, a past solution is remembered and implemented" (Blackwell et al. 2001). When such a search fails to provide sufficient information, the consumer, or would-be tourist in this case, proceeds with a pre-purchase search that is an "external search motivated by an upcoming purchase decision" (ibid).

Advances in information technology have permeated every aspect of modern life, and show no signs of stopping. Anyone with access to the Internet can now shop and pay their bills online, connect with friends, do research, and engage in a plethora of other activities.

Furthermore, the Internet has evolved from a network of static pages to one of dynamic, collaborative, and interactive sites. User-generated content has become increasingly popular, as people can share media, information, opinions, reviews, and other content with each other. This collaborative new form of Internet has been termed Web 2.0, which

> "is a philosophy and not a specific technology (for instance AJAX - Asynchronous JavaScript and XML) to which it can be reduced. Web 2.0 is based on a common vision of its user community. The objective of all Web 2.0 services is to mutually maximize the collective intelligence of the participants. The collective intelligence can be defined as the knowledge that is distributed within a group. It reflects the knowledge of all participants and continuously adapts to changes in the environment or opinion leadership" (Hoegg et al 2006).

The Web 2.0 includes social networking sites (SNS - e.g. Facebook), video sharing sites (e.g. YouTube), picture sharing sites (e.g. Picasa) and blogs (e.g. Blogger), amongst others; it has

influenced most industries. SNSs allow communities comprising large numbers of people to exchange information and opinions on common interests. Social media therefore is defined as a "network of content created by consumers, typically informed by relevant experience, and archived or shared online for easy access by other impressionable consumers" (Blackshaw and Nazarro 2006). Beyond generalized SNSs, specialized interest sites allow individuals to discuss specific topics, including travel and tourism.

This article aims to identify trends introduced by Web 2.0 technologies that influence travel planning. Our findings are based on a survey of 653 student respondents, referred to as would-be tourists in this article, who have undertaken a trip in the last three years.

Conceptual Framework/Literature Review

The influence of Web 2.0 technologies

It was customary in the tourism industry for would-be tourists to consult travel agencies to discuss options face-to-face with the service provider. Researchers have argued that the innovations in information and communication technologies (ICTs) have restricted the scope and threatened the longevity of travel agencies (Cheyne, Downes and Legg 2005).

Leung, Law, van Hoof and Buhalis (2013) remark that two "mega trends" have begun to impact the way in which consumers interact with the industry: search engines and social media. For instance, tourists and travellers can discuss their experiences and find information on sites such as TripAdvisor, WAYN, and TravBuddy. Sites such as Travelocity and Expedia aggregate many tourism product offerings online and present users with best prices, while allowing for trip customizability. The growth and importance of such travel sites and applications has led to their network being dubbed Travel 2.0 (Miguens, Baggio and Costa 2008). While an increasing number of individuals, roughly proportional in growth to that of

Internet users in general, choose to use the Internet to complement their travel plans, many consumers continue to conduct their business using traditional methods (Huang 2012).

As evidenced by Buhalis and Law (2008), the emergence of social media in tourism and travel has significantly altered the experience. The new digital modes have become a source of information that is hard to avoid for tourists due to the large volume of user-generated content on the Web. In this regard, Xiang and Gretzel (2010) point out that social media hold a substantial place in search engine results and play an increasingly important role in the travel planning process. Indeed, for some years, Google has integrated user comments in its search algorithm (Thanh and Maingot 2013). The future therefore belongs not only to those who offer the best price, but also to those who received higher satisfaction ratings by consumers on the Web.

Travel 2.0 sites and applications

Users of Travel 2.0 sites and applications do not form networks based on friendships or other relationships, as they would on other social media. Instead, communities are built within travel-related forums and message boards. However, a new feature of TripAdvisor, the Traveler Network, lets users build networks of acquaintances in order to plan trips more effectively. Discussion with other travelers allows users to get responses to specific questions. Such sites have a marked influence on consumers' decision-making. For instance, one study reviewed by Law et al. in 2013 claimed that one-third those who travelled for leisure in the UK used sites such as TripAdvisor to inform their decisions regarding hotel choice. Another study by Miguens, Baggio and Costa (2008) found that in, 2007 in the UK, 80% of travellers researched hotels online before booking, and half of those who researched online opted not to patronize hotels with bad reviews.

The use of search engines to research travel destinations and services often leads consumers to social media rather than directly to sites created for the purposes of marketing (Xiang and Gretzel 2010). The most widely used type of social media are the social networking sites, or SNSs, which are "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system," (Boyd and Ellison, 2008).

By far the most widely used SNS is Facebook, which saw its user numbers increase from 100 million in 2008 to 1.11 billion in March 2013. Facebook is not merely frequented by teenagers and young adults. In fact, "in 2013, 89% of 18 to 29-year-olds, 78% of 30 to 49-year-olds and 60% of 50 to 64-year-olds are active on the social web," (Fox, 2013). It also enjoys a universal reach: the application already being translated into seventy languages.

Rather than following a business-to-consumer marketing pattern, Travel 2.0 sites operate as peer-to-peer networks (Miguens, Baggio and Costa 2008). Individuals post their subjective experiences, photos, videos, and reviews with the intention that individuals who are considering the same destination will access this content. This is fundamentally different from the traditional marketing framework in which the firm attempts to advertise a brand and sell its features to the consumer. In this way, Travel 2.0 has revolutionized the way in which consumers inform themselves, and others, on their travel destinations, methods of transportation, and other hospitality-related needs.

Miguens Baggio and Costa (2008) point out that Travel 2.0 applications necessitate new approaches to marketing tourism products and services. As user-generated content begins to dominate the web, it also gains greater influence over the image associated with any given hospitality firm. Studies have found that research based in social media is highly effective in preparing individuals with the information necessary to make a better purchase decision

(Schmallegger and Carson 2008; Yoo and Gretzel 2011). Consumers' decisions regarding which services to use and which locations to visit are now heavily influenced by the content posted by previous tourists. This means that social media has become a primary means by which to build a positive image for a hotel, for instance, and help to market it. In fact, a large number of hospitality-related organizations have already begun using social media as a marketing tool to reach target demographics (Cox et al. 2009; Xiang and Gretzel 2010).

Word-of-mouth communication

Whereas Web 2.0 provides mass connectivity and collaboration, the idea that people turn to others for advice and recommendations before purchasing a product is not new. Word-of-mouth is a powerful source of information and influence. In the tourism industry, consumers seldom have the opportunity to use their own past experiences with a given product, and therefore rely even more heavily on other cues regarding quality (Schmallegger and Carson 2008). As discussed by Tham, Croy and Mair (2013), traditional word-of-mouth, is characterised by a high level of credibility and sway when it comes to purchase decisions.

Electronic word-of-mouth, communicated via Travel 2.0 sites and communities, can be distinguished from traditional word-of-mouth. While the latter is associated with familiarity of the source, such as family members, friends, and acquaintances, a reader does not necessarily have any indication regarding the credibility of the former, often sourced from anonymous individuals who make their opinions and reviews public on the Internet (Brown, Broderick and Lee 2007; Lee and Youn 2009). Furthermore, users cannot ascertain the motives behind electronic word-of-mouth as they might be able to for traditional word-of-mouth. Finally, nuances in human communication must be interpreted through the technological interface; that is to say, sarcasm and non-verbal cues may be lost. This may mitigate the credibility of electronic word-of-mouth (Tham, Croy and Mair 2013).

Despite the different features associated with the format in which electronic word-of-mouth is presented, studies have shown that it is becoming increasingly important and ubiquitous in travel-related research (Xiang and Gretzel 2010). This is not only because some consumers may choose to directly access social media in order to seek answers to their questions, but because the nature of social media sites—frequent updates and several hyperlinks leading to even more related information—improves their desirability relative to other sites in searches. This implies that social media posts appear with greater frequency in search results and therefore are more visible to the public (ibid.).

Content sharing

The use of social media is not limited to researching options before a trip or to marketing opportunities by the supplier. While the greatest utility of such sites results from the research phase (Tham et al. 2013), narratives involving tourism services that are posted by others often allow potential consumers to imagine beforehand what their experiences would be like. Social media therefore serve as a proxy that circumvents users' inability to try the product prior to purchasing it, and thus it enjoys a multi-pronged interaction with the tourism industry that spans over choices related to destination, travel, hospitality, and beyond. Individuals first use it to find information, then to evaluate their experiences during the trip, and then to share content following their trip (Cox et al. 2009).

Interestingly, research has shown that a relatively small proportion of tourists post their trip-related photos and comments online (Lo et al. 2010). They found that younger users, who posted their content on social media, tended to do so in order to create and maintain online self-images. Older users use social media to store and share images with remotely located family members. Furthermore, individuals who posted content on Web 2.0 applications are also more likely to use other such applications to conduct tourism-related searches.

Tham et al. (2013) argue that while the hospitality industry can benefit from the marketing potential of social media, caution must be taken. For instance, it is unethical to offer incentives for positive reviews, and such practises may erode the credibility of reviews once the motivations are exposed. It is quite possible for a firm to be subjected to negative word-of-mouth in the digital domains; however, this can be mediated with timely, personalized responses (Tham et al. 2013). Furthermore, Wang and Fesenmaier (2004) demonstrated how firms can benefit from engaging with consumers over social media and providing more customized, comprehensive service by building better rapport and relationships with them.

Firms can also stand to benefit by analyzing the posts in social media to uncover previously unknown strengths and weaknesses of their services. Travelers consider the content posted to blogs and other such sites to be reliable and credible (Kotler et al. 2010). Individuals often post online content to share experiences, to engage in social interaction, and to engage in altruism, all of which provide positive effects to the user (Yoo and Gretzel 2011; Pan et al. 2007).

Because users' posted content has no ostensible reason to be false, firms can extract genuine experiences that consumers have had with their product. Feedback is provided on a mass scale and organizations can judge the various levels of urgency of what needs to be improved, not just in order to mass distribute products, but to achieve better customer retention.

Cultural and sex differences

Several recent studies try to explain the possible influence of culture and sex on behaviour on social networks. For instance, a comparative analysis between Facebook and MySpace users has shown the existence of significant differences in shared content according to users' socio-professional characteristics (Boyd, 2007). In the same vein, a review of 83 Facebook profiles of college students by Grasmuck et al. (2009) reveals that ethno-racial identity strongly

influences these students' online behaviour. Similarly, Pedersen and Macafee (2007) have analyzed the behaviour of 48 female and male British bloggers and observed a direct link between blogging behaviour and gender.

Other research (Notley (2009) and Cox et al (2009)) demonstrates the influence of culture on the use of social networks. In a study of user behaviour in India, Pal (2010) explains that the user-generated content is dominated by matrimonial information services. In China, Korea, and Japan, online games form the core of the information shared on social networks (Smyrnaois, 2011). For Fragoso (2006), the relationship between culture and practices on the Web in general and social networks in particular, is clearly established. Through comparative studies between the Brazilian and American users of social networks, Fragoso (2006) concludes that identity and culture clearly influence users' online behaviour. At the same time, Herring et al. (2007) show that language also influences the use of social networks. Although research in this area is not sufficient to establish a clear relationship, the authors believe that language likely influences the use of social networks.

Method

The objective of this study is to explore the use of social networks and other Web 2.0 platforms in the travel industry. This study is therefore exploratory in nature. We did not seek to extrapolate our results to any given population subgroup. Thus, we conducted an online survey using a non-probability structured sample (n = 653) of students from seven universities in Montreal and one in Toronto. The sample comprised 288 females and 307 males, with 58 respondents preferring not to answer the question about sex. The survey was conducted over a four-week period in the winter of 2012.

Would-be tourists were selected in public spaces on campuses. Respondents were solicited in person and were first screened using the following three questions:

1. Are you a university student?
2. Have you personally planned a pleasure trip of 7 days or more in the last three years?
3. Would you be willing to answer a survey on the use of social networks and other Web 2.0 tools by student tourists?

The link to the web-based questionnaire was only given to those whose answers to all three questions were affirmative.

We analyze the consumer preferences for tourism-related decision-making by tabulating the data to generate frequency tables identifying the most frequently preferred alternatives. We conduct appropriate statistical procedures to test the significance of differences in preferences. We tabulate results separately for the initial and final stages of decision-making.

We follow up the descriptive analysis with econometric models to capture how various Web 2.0 technologies and the traditional word-of-mouth factors influenced the decision-making of the would-be tourists. We explore in detail the final stage of the decision-making of the respondents for the influence of Web 2.0 technologies and other resources.

The respondents ranked social networking sites and other online content sharing tools, such as Facebook, YouTube, and Flickr, on a rank of 1 (not at all useful) to 4 (highly useful) as an aid to making travel-related decisions. Similarly, and in a separate choice set, the respondents ranked other resources, such as family and friends, search engines, and online travel agencies, for their usefulness when searching for tourism-related information.

The descriptive analysis revealed differences in the preference for Web 2.0 tools and other resources between male and female respondents. Similarly, we observed similar differences between French and English speakers. The next step involved testing for the statistical significance of these differences in an econometric framework.

The ordinary least squares regression models are not suited for data where each respondent is faced with multiple, discrete alternatives in a choice set. Conjoint analysis and conditional logit (discrete choice) models (McFadden, 1974) have been the preferred tools to analyze consumer choices when they evaluate a choice set comprising several mutually exclusive alternatives. The ranking of alternatives, as is the case with our data set, poses an additional challenge that limits the use of conditional logit models. Conditional logit regressions can model the choice between alternatives where the non-chosen alternatives are coded as '0' and the chosen alternative is coded as '1'for each observation. In ranked data, alternatives in a choice set are ranked in a particular order, reflecting the preferences of the decision-maker.

Beggs, Cardell, and Hausman (1981) proposed a generalization to the conditional logit model to accommodate the ranking of alternatives by the respondents. Hausman and Ruud (1987) refined their method further, which is commonly known as the rank-ordered logit model. In the marketing literature, Punj and Sraelin (1978) and Chapman and Staelin (1982) developed a similar generalization of the conditional logit model, known as the exploded logit model. We refer the readers to Allison and Christakis (1994) for a detailed description of the theoretical constructs and examples of rank-ordered logit models.

We estimate two models to capture respondents' preferences for Web 2.0 technologies and other resources that influenced their search for tourism-related information. The choice set for Web 2.0 technologies included: Facebook, Flickr, Foursquare, Google+, Picasa, Renren, Twitter, and YouTube. The respondents ranked each alternative in the choice set on a scale of 1 (not useful at all) to 4 (highly useful). The estimated model captures the way in which respondents evaluate the attributes of alternatives (price, availability, etc.), as well as attributes of the respondent (age, sex, etc.), to ascertain the alternatives' overall attractiveness. The first model works with a choice set that includes only social media and other digital resources.

We estimate a separate model for other resources that included the following: family and friends, search engines, personal travel blogs, tourism brochures, and online travel agencies. The second model evaluated consumer preferences for a choice set that included the traditional sources of information (e.g., family and friends) and the new digital media (e.g., blogs and other online resources). The likelihood function for the model is flexible to accommodate ties in ranking. This is required because the same respondent may rank two or more alternatives equally. For instance, a respondent may rank both Facebook and YouTube as highly useful. We report results for both the Exact and Breslow approximations to deal with ties.

The data is structured in the *long* format where each respondent is represented by multiple observations, one for each of the alternatives in the choice set, respectively. The attributes of the alternatives, such as price or availability, are uniquely represented for each respondent. Our data set did not include information on the alternatives in the choice set. The estimated model includes $j-1$ dummy variables (β_0 in the traditional OLS model), representing all except one alternative in the choice set. The model arbitrarily sets one alternative as the base case and compares other alternatives to the base case. For the Web 2.0 model, we have set Facebook as the base case. For other resources model, we have set 'family and friends' as the base.

The characteristics of the decision-maker, such as age or income, are the same in each choice experiment. Such variables are interacted with the dummy variables representing the alternatives before they are used in the model.
The estimated coefficients represent the logarithm of odds. A negative coefficient suggests that the alternative is less attractive than the base case alternative. The exponentiated estimated coefficients give the odds ratios between the alternative and the base case.

The models reported here include two sets of controls (gender and the province of residence) in addition to the $j - 1$ dummy variables. Gender accounts for the differences in preferences between male and female respondents. The province of residence captures the cultural diversity of the respondents residing in the French-speaking Quebec and the English-speaking Ontario.

Findings

The majority of participants (82.6%) were from Quebec, and spoke French as their mother tongue (62.5%) rather than English (15.1%) or other languages (22.4%). Almost 89% respondents were undergraduate students and only 11% were graduate students. Almost 90% respondents were registered for full-time studies, which affects the distribution of income among participants. Thus, 90.3% of all respondents earned less than $25,000 per year. Furthermore, more than three quarters (77.2%) were aged 24 or less. One can therefore conclude that the respondents reflect the average demographics of university students.

Resources influencing travel planning and choice

We measured the influence of six Web 2.0 social networking or content posting sites, namely Facebook, Flickr, Foursquare, Google+, Picasa, Renren and Twitter, both in the initial trip planning stage and final travel choice. We have also measured the influence of twelve other resources, namely opinions of family and friends, search engines (e.g. Google, Yahoo, Bing), meta search sites (e.g. Expedia, Kayak), destination Web sites (e.g. usatourist.com), blogs specialized in tourism (e.g. aluxurytravelblog.com), personal travel blogs, tourism brochures, tourism guides, travel agencies (bricks and mortar), travel agencies (online), tourism forum (TripAdvisor), resort or wholesaler Web sites.

For social networking or content posting sites, hereby referred to as SNSs, we report only the most significant results. Thus, only three sites (Facebook, Google+, and YouTube) are reported as being moderately or highly useful for final travel choice by 25% or more of the respondents, corresponding to 164 of the 653 would-be tourists. We present a comparative analysis between the initial planning stage and the final travel choice for all three SNSs in Table 1.

Insert Table 1

In the initial planning stage, Facebook appears to be the most influential SNS with 283 respondents, 43.3% of would-be tourists, finding it moderately or highly useful, whereas Google+ is mentioned by only 209 respondents (32.0%) and YouTube by 221 (33.8%). The respective influences of all three SNSs or content sharing sites appear to be somewhat lesser at the time of final travel choice, with Facebook and YouTube losing some of their usefulness to a similar percentage of would-be tourists, respectively 24.4% and 23.5%, whereas Google+ loses only about half that number, 12.9%. Nonetheless, at least 25% of respondents find each of the three to be somewhat useful at the time of travel choice, and Facebook appears to remain the most influential. However, because this survey was conducted during the incipient stage of Google+, results of the latter may be inflated due to confusion between Google.com, the search engine, and Google+, the social media application. The results of our analysis regarding search engines, presented below, appear to confirm this intuition.

Amongst the twelve other resources whose influence we measured, none are reported as being moderately or highly useful for final travel choice by less than 30% of respondents. We thus present results for all twelve other resources. Table 2 presents a comparative analysis between the initial planning stage and the final travel choice for the following twelve resources: family and friends, search engines, meta search sites, destination Web sites, personal travel blogs, blogs specialized in tourism, tourism brochures, tourism guides, travel

agencies (bricks and mortar, and online), tourism forums, and resort or travel wholesaler Web sites.

Insert Table 2

In the initial planning stage, family members and friends appear to be the most influential resource, with 524 respondents, 80.2% of would-be tourists, finding them moderately or highly useful, and with search engines rated to be highly or moderately useful at a distant second with 413 respondents (63.2%). However, for final travel choice, both resources virtually tie for the most influential resource, with respectively 499 (76.4%) and 465 respondents (71.2%). This tie is due to the fact that search engines *gain* 12.6% of respondents who rate them as highly or moderately useful, while Facebook loses 4.8% from initial planning to travel choice. In our view, this high influence of family members and friends may in turn partially explain the influence of SNSs, as social networks are composed of family members, close friends, and acquaintances. Also, the high influence of search engines, both at the initial planning stage and for the final travel choice, confirms our intuition about the confusion between Google+ and Google.com.

Meta search sites are not far behind in the third position, with 376 respondents (57.6%) rating them as moderately or highly useful in the planning stage and 335 (51.3%) for travel choice. Such sites are not fundamentally different from search engines; they are tools that send requests to the latter, or to databases, and aggregate the results. It is thus expected that respondents rate both similarly in terms of influence. Other resources' proportions of respondents rating them as highly influential ranged between 34.6% and 55.0% in the planning stage and between 30.9% and 45.8% for travel choice. As mentioned, their influence is thus equal to or greater than that of SNSs.

Because travel agencies have been one of the traditional means of researching information for travel planning and booking, we believe it is important to mention it separately. In the initial planning stage, the online agency appears to be more influential than the brick and mortar agency, with 306 respondents, 46.9% of would-be tourists, finding it moderately or highly useful, compared to only 231 respondents (35.4%) for the latter, and thus indicating a preference for the online version for information gathering. This tendency is again reflected for travel choice; both types of agency are respectively mentioned as moderately or highly useful by 277 (42.4%) and 216 (33.1%) respondents. Thus, for travel choice, the brick and mortar type of agency remains as influential as Facebook, which was mentioned by 214 respondents, or 32.8% of would-be tourists.

Nature of information influencing decision making

We have also tested the nature of the information obtained from the various resources to determine which were the most influential on the decision to buy a tourism product. In Table 3, you will find a comparative analysis of ten elements: Description of a product on a web site, positive and negative comments published by tourists, assessments published by recognized organizations, opinions of friends and family members, opinion of a travel agent or authorized dealer, photos or videos published by friends or family members, photos or videos published by tourists, and advertising on social networks or the web.

Insert Table 3

We find that the opinions of friends and family members rank by far the highest in terms of their influence on the buying decision of would-be tourists, with 319 respondents (48.9%) of and 309 (47.3%) respectively finding those elements of information *highly* influential. Comments published by tourists, both positive and negative, are also *highly* influential elements for a significant number of respondents. Photos or videos rank very closely to

comments, but only those published by friends or family members. Photos published online by tourists rank much lower.

It is interesting to see that although the travel agency was considered to be a good source of information for trip planning and travel choice, the online agency in particular, the opinion of a travel agent ranks somewhat low at the time of decision making; only 91 respondents, 13.9% of would-be tourists, find those elements *highly* influential. The least influential element is advertising on social networks or the Web, with only 39 respondents finding those *highly* influential, merely 6.0% of would-be tourists. Lastly, the four elements of information rated to be *not at all* influential by the highest percentage of respondents were advertisements on social networks (24.3%), the opinion of a travel agent or authorized dealer (13.3%), photos and videos posted by tourists (12.6%), and product description on Web sites (10.7%).

Booking travel, transportation, lodging and on site activities

Some travellers book an all-inclusive vacation package, including restaurants and recreational or cultural activities, before they leave home; others prefer to book transportation and lodging separately, and make reservations to restaurants and activities after arriving on site. Even on site, vacationers use different means of booking restaurants and activities. Table 4 presents the comparative analysis of five components of a trip, i.e. the package, transportation, lodging, restaurant and activities, and the means by which travellers book those.

Insert Table 4

To fully understand the differences in booking methods for all five components of a trip, we have summarized the preferred means of booking into four categories: Web, phone, travel

agency, and on-site. One tendency is immediately evident; the Web is the most commonly used booking method for pre-trip components, which are commodity type products in our view. Thus, travel packages are booked through the Web by 53.4% of travellers, transportation by 47.6%, and lodging by 45.8%, either with a travel agency or a travel wholesaler. Also evident, is the fact that activities at the destination are largely booked in person on-site, restaurants by 62.8% of vacationers, and recreational or cultural activities by 67.1%, either directly at the restaurant or the hotel (restaurants: 55.3%, activities: 56.7%) or with the travel agency's representative on site (restaurants: 7.5%, activities: 10.4%).

Furthermore, our data shows that travel agencies are not on the verge of becoming extinct; 40.0% of travellers use them to book travel packages, 37.8% for transportation, and 35.4% for lodging. Mind you, the means of interacting with the travel agency may be through the Internet, the phone, or in person on site. With smartphones and mobile phones having become staples, it is not surprising to see these means of communication are preferred by a significant percentage of travellers to book travel packages (13.6%), transportation (13.5%), and lodging (12.7%).

Posting of Web content

The popularity of the Internet and Travel 2.0 sites is evidenced by the numbers of purchases and the influence of research done online. However, individuals also participate in the peer-to-peer construction of the new tourism industry. Almost half (47.7%) of the individuals who traveled posted vacation-related content online. Of those who chose to publish their experiences, the majority posted the content after their trip (53.6% of responses), whereas 24.4% posted the contents during the trip. In 94.5% of cases, content was published to Facebook; however Twitter and YouTube were also used to host content in 18.6% and 13.1% of cases, respectively.

We performed cross-tabulation analysis between the contents shared on the Web and the elements that have influenced their decisions to buy a tourism product. Results are presented in table 5.

Insert Table 5

Significant differences were found to exist with respect to the type of content posted on the Web and the level of influence this type of content had on the decision process. For instance, 51.2% of respondents for whom photos and videos posted by friends and family members were highly influential, also posted photos and videos of themselves. Meanwhile only 36.1% of those for whom such content was not influential in their decision-making posted such content themselves [p = 0.023, confidence level > 97%]. The same is true for people posting photos and videos of people travelling with them (46.3% vs 24.6%) [p = 0.013, confidence level > 98%], and for those posting photos of sites visited (36.9% vs 11.5%) [p = 0.000, confidence level > 99%].

Similar differences were found to exist regarding positive comments posted on the Web. For instance, 16.3% of people for whom positive comments posted by tourists were highly influential, also posted positive comments about their vacation package, whereas only 5.9% posted such content when it was not at all influential on their decision-making process [p = 0.016, confidence level > 98%]. The same is true for people posting positive comments about restaurants (13.5% vs 2.0%) [p = 0.041, confidence level > 95%].

Sex and cultural differences

While opinions of family and friends were found to be the most influential elements of travel planning, Facebook was identified as the social media used the most at all stages of that process. Interestingly, cross-tabulation analysis reveals that the influence of those elements

varies by the sex and culture of respondents, the latter being determined by mother tongue and whether or not they have family residing outside of Canada.

In Table 6, we present a cross-tabulation analysis of resource usefulness by sex and mother tongue, both for initial planning and travel choice. In the initial planning stage, significant differences were found to exist with respect to sex in rating the usefulness of opinions of family and friends [p = 0.002, confidence level > 99%]. Almost three out of four female respondents (70.5%) find those opinions to be *highly useful*, whereas a little more than half of male respondents (57.7%) feel the same way. Conversely, only 3.1% of female respondents say they do not take those opinions into account at all, compared to a much larger proportion of males (9.1%) reporting the same discounting of such opinions.

Insert Table 6

In the travel choice stage, significant differences were also found to exist with respect to sex in rating the usefulness of opinions of family and friends [p = 0.009, confidence level > 99%]. Two thirds of female respondents (66.3%) find those opinions to be *highly useful*, whereas a little more than half of male respondents (53.7%) feel the same way. Conversely, only 5.6% of female respondents say they do not take those opinions into account at all, compared to a much larger proportion of males (10.7%) reporting the same discounting of such opinions.

With respect to culture as determined by mother tongue, significant differences were found to exist in the perceived usefulness of Facebook in the initial planning stage [p = 0.006, confidence level > 99%]. Whereas 36.7% of English speaking respondents find Facebook to be *not at all useful*, only 28.3% of French speaking respondents feel the same way. Furthermore, the percentage of English speakers claiming not to use Facebook for trip planning is three times larger than that of French speakers (respectively 8.9% and 2.7%). Percentages of English

and French speaking respondents finding Facebook *highly useful* are, however, almost identical (respectively 23.0% and 22.2%).

Although more subtle than those identified with respect to sex, significant differences were also found to exist with respect to culture in rating the usefulness of opinions of family and friends. In the initial planning stage, 66.7% of English speaking respondents find such opinions *highly useful* compared to only 59.1% of French speaking respondents [p = 0.010, confidence level = 99%]. Percentages of English and French speaking respondents finding opinions of family and friends *not at all useful* are, however, almost identical (respectively 6.7% and 7.0%). In the travel choice stage, 61.1% of English speaking respondents find opinions of family and friends *highly useful* compared to only 55.1% of French speaking respondents [p = 0.009, confidence level > 99%]. Conversely, 10.2% of French speaking respondents find Facebook *not at all useful* compared to only 7.8% of English-speaking respondents.

In Table 7, we analyse the influence of culture, as determined by the whether the respondent has family outside Canada, on the claimed resource usefulness or level of influence. Significant differences were found to exist between respondents with family members outside Canada and those without for three types of information: opinions of friends, opinions of family members, and photos or videos published by friends or family members. Whereas, respectively for each type of information, 57.4%, 59.5%, and 40.2% of would-be travelers with family outside Canada found these types of information highly influential to their decision, only 40.6%, 41.4%, and 24.1% of respondents, respectively, without family outside Canada claimed the same [p = 0.000 (opinions friends), 0.000 (opinions family members) and 0.001 (photos/videos by friends/family members, confidence level > 99%]. These results are consistent with those outlined above: the opinions and posted contents of friends and family members and more likely to be influential for respondents with family outside Canada.

Insert Table 7

Significant differences were also found to exist for three sources of information, both in the initial planning and travel choice stages: family and friends, search engines, and Meta search sites. In all instances, the percentages of respondents with family members outside Canada claiming that the resource was highly influential was higher than the percentage of respondents without family members outside Canada. For instance, respectively in the initial planning and travel choice stages, 70.1% and 66.9% of would-be travelers with family outside Canada found family and friends to be a highly useful source of information. These percentages were significantly lower [$p = 0.001$ (planning) and 0.000, confidence level > 99%] for respondents with no family members outside Canada, precisely 55.9% and 51.3%, with differentials of 14.2% and 15.5% respectively. Family members and friends are thus resources that are more likely to be called upon to plan and choose a trip. Similar differences exist for search engines and Meta search sites. However, no significant differences were found to exist regarding the influence of SNSs.

The rank-ordered (exploded) logit models confirm the results we have obtained through simple tabulations. Table 8 presents the estimates for the model that captures the respondents' preferences for social media technologies. Table 9 presents the results for the model that captures the respondents' preferences for the traditional (e.g., friends and family) resources against the new digital resources (e.g., travel blogs).

Both tables report results for four separate models. The first model presents the raw coefficients for the model with $j - 1$ dummies. The second model represents the same model as in column 1 with exponentiated coefficients. The third model reports exponentiated coefficients (odds ratios) for the model that introduces coefficients for the dummy variable indicating whether a respondent is female and for the province of residence after they have been interacted with j dummy variables representing each alternative. The Breslow

approximation is often used for fast convergence, whereas the exact method takes much longer to converge. While the results reported in Tables 8 and 9 reveal similar coefficients reported by the Exact and Breslow approximations, we notice the difference in the magnitude of the parameters and in at least two instances note that the Breslow approximation did not identify an interacted variable as statistically significant. Also note that the pseudo R-squared, a measure of the overall model fit, is starkly different for the Breslow and Exact methods. We will discuss results only for the Exact method.

Table 8 reports the results for Web 2.0 technologies where we have set Facebook as the base case. Hence, the model does not report a dummy variable for Facebook because all other alternatives are compared against Facebook. We see in column 2 in Table 8 that all coefficients are statistically significant. We also note that compared to Facebook, odds are lower for other social networking alternatives. The odds ratios reported in column 2 suggest that the odds of preferring Flickr are .24 times the odds of preferring Facebook. We also see that YouTube is the closest to Facebook in terms of the preferences of respondents, given by the higher odds of 0.665.

Column 4 reports the interactions for gender and the province of residence in addition to the dummy variables for the $j-1$ alternatives. We note that the odds ratios for female are statistically insignificant for all except Google+, which we have described earlier, represents Google search engine rather than the social networking site, Google+. We see that the odds for female respondents to prefer Google are 4.32 times the odds for male respondents. Otherwise, we do not see a difference in the preferences for social networking sites for males and females.

We also note from Column 4 in Table 8 that with the exception of Flickr, we do not see statistically significant differences between respondents from Ontario and Quebec. We find

that the odds of preferring Flickr for Ontario residents are .12 times the odds for the residents in Quebec.

Insert Table 8

Column 4 in Table 9 confirms our earlier findings that the opinions of family and friends continue to dominate the tourism-related decision-making of respondents who prefer the opinions of those who they know to those from strangers in the digital domains. We find that the odds of preferring search engines are .75 times the odds for preferring family and friends to seek input on tourism-related decision-making. The odds corresponding to online travel blogs and other emerging digital frameworks are even lower relative to those of family and friends.

We find only limited evidence for gender-based differences in preferences for tourism-related information. The model suggests that women are less likely than men to prefer information shared on personal travel blogs. We do not find statistically significant differences between men and women for other resources.

We find statistically significant evidence for the difference between respondents from Quebec and Ontario. The model in Column 4 of Table 9 reveals that the respondents in Ontario are less likely to prefer tourism brochures and online travel agencies than are the respondents in Quebec.

Insert Table 9

In summary, the results from the rank-ordered (exploded) logit models confirm that opinions of friends and family members are the dominating influence in tourism-related decision-making. We find further evidence for the primacy of Facebook as the dominant influence

amongst the Web 2.0 technologies. We do not see travel-related online tools to be dominant relative to the more generic digital platforms, such as Facebook and YouTube.

Discussion and Implications

Our findings suggest a paradigm shift in the way tourists approach travel. Advertisements, opinions expressed by a travel agent, photos and videos posted by unknown third parties, and descriptions of product offerings can be interpreted to have inherent biases: consumers have no way to verify that such descriptions are accurate until it is too late.

Furthermore, despite the rising influence of Web 2.0 technologies, opinions of family and friends were found to be the most influential elements of travel planning. In fact, respondents deemed the latter to be equally useful to Web search engines in the early planning stages. The impact of traditional word-of-mouth is no doubt attributable to the high level of credibility of this form of communication, especially when it comes to purchase decisions. In turn, this high credibility undoubtedly results from the trust one has in the opinions and recommendations of relatives and close friends. One may conclude that opinions of family and friends will be just as trustworthy whether they are received through face-to-face communication or a social network such as Facebook because the source is credible.

The question of credibility of the information source is now positioned as a key element in any strategy to promote tourism products. The research presented here demonstrates that travelers trust primarily people closest to them, i.e., friends and family members, and then experienced tourists whose profiles are similar to theirs. This said, while Facebook is the social network deemed to be most useful by respondents, we assume that opinions of "friends" within this social network may not be considered to be as dependable as the ones from real-life friends. Several factors may affect the credibility of the former, including the length and closeness of the relationship, amongst others. Further research is thus needed to

explore the nuances between the opinions of friends in real life and the friends on Facebook. Nonetheless, Facebook remains a privileged source of information for prospective tourists, which explains why it is, by large, the preferred network of the major establishments in the hospitality industry where social networks are used mainly to share information, promote products, and inform clients (Duguay 2011). Their use is claimed to promote customer loyalty, and increase revenues and occupancy rates.

These findings encourage managers in the tourism industry to review their promotional strategies. In the context of abundant user-generated content, managers must move towards network interaction and the control of the veracity of the information that circulates on the Web about their businesses. Effective marketing strategies must be based on market segmentation because different market segments do not react the same way, as we have shown to be the case for people of different sexes and cultures.

Building on earlier research (Grasmuck et al, 2009; Notley, 2009 Cox et al, 2009 and Pal, 2010) we have also demonstrated the impact of the cultural dimension on the use of social media. Our results support the conclusions of a report published by the Canadian Parliament (Dewing 2012) on the profile of users of social media. This report states that Canadians of foreign origin are more likely to use instant messaging (chat) and social networks, and to make phone calls, than those born in Canada. However, the latter are more willing to share content on social media. The differences reported between respondents with family members outside Canada and those without exemplify these behavioral differences.

Those variables and many others must be taken into account to design an effective communication plan. Fotis, Buhalis and Rossides (2011) point out that the cultural dimension often determines behavioral differences from one market to another. Hence, there is a need to use and mobilize cultural and even holistic approaches to better understand the use of social media in tourism.

Similar to Cheyne, Downes and Legg (2005), our results show that the travel agency is far from being extinct. With respect to initial travel planning, the travel agency remains a prime resource for information gathering. Even in terms of economic activity, that is booking a travel package or a component of it, the travel agent remains the preferred means of conducting the transaction, with 40.0% of respondents using this resource to buy a travel package in person, over the phone, or online.

Furthermore, our research demonstrates a relationship between the type of content posted on the Web and the influence that this type of content has on the decision-making process; travellers are more likely to post content when such content has influenced their decisions. It would also appear that positive comments influence the posting of additional positive comments. This information is crucial for several reasons. First, it stresses the importance of tailoring Web sites to the targeted market segment. Second, it again stresses the need for managers to monitor the comments circulating about their organizations, as positive comments will generate more positive comments, which is the e-version of the traditional word of
mouth. Since the veracity and credibility of information are crucial, we would caution managers against using people inside the organization or hiring commercial services to post favourable comments as pseudo-tourists.

Social media and other Web 2.0 technologies open up a world of possibilities, the surface of which we have barely scratched. More research is needed to understand the extent of the changes they bring to social networking and consumer behaviour in the hospitality industry. What is more, this research must be ongoing because new Web technologies appear almost on a monthly basis and usage evolves rapidly.

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TABLE1 – Comparative analysis of influence: Facebook – Google+ – YouTube

	Initial planning		Final travel choice		Difference (B-A)	
SNS	Frequency (A)	Percentage	Frequency (B)	Percentage	Frequency	Percentage
Facebook	283	43,3%	214	32,8%	-69	-24,4%
Google+	209	32,0%	182	27,9%	-27	-12,9%
YouTube	221	33,8%	169	25,9%	-52	-23,5%
n	653					

TABLE 2 – Comparative analysis of influence: Twelve resources

	Initial planning		Final travel choice		Difference (A-B)	
Resources	Freq. (A)	Percent.	Freq. (B)	Percent.	Freq.	Percent.
Family and friends	524	80.2%	499	76.4%	-25	-4.8%
Search engines	413	63.2%	465	71.2%	52	12.6%
Meta search sites	376	57.6%	335	51.3%	-41	-10.9%
Destination web sites	323	49.5%	274	42.0%	-49	-15.2%
Personal travel blogs	226	34.6%	204	31.2%	-22	-9.7%
Blogs specialized in tourism	240	36.8%	202	30.9%	-38	-15.8%
Tourism brochures	300	45.9%	252	38.6%	-48	-16.0%
Tourism guides	342	52.4%	291	44.6%	-51	-14.9%
Travel agency (bricks and mortar)	231	35.4%	216	33.1%	-15	-6.5%
Travel agency (online)	306	46.9%	277	42.4%	-29	-9.5%
Tourism forum	359	55.0%	299	45.8%	-60	-16.7%
Resort or travel wholesaler web sites	282	43.2%	234	35.8%	-48	-17.0%
n	653					

TABLE 3 – Influence of different types of information on buying decision

Type of information	Frequency	Percentage
Opinions of family members	319	48.90%
Opinions of friends	309	47.30%
Positive comments published by tourists	215	32.90%
Negative comments published by tourists	212	32.50%
Photos or videos published by friends or family members	203	31.10%
Assessments published by recognized organization	168	25.70%
Description of a product on a web site	156	23.90%
Photos or videos published by tourists	124	19.00%
Opinion of a travel agent or authorized dealer	91	13.90%
Advertising on social networks or the web	39	6.00%
n	653	

TABLE4–Bookingmethodsforcomponentsofatrip

Booking method	Package	Transport	Lodging	Restaurant	Activities
Through internet with a travel wholesaler	33.8%	30.0%	29.1%	10.7%	9.3%
By phone with a travel wholesaler	5.8%	6.4%	5.2%	3.1%	2.3%
Through internet with a travel agency	19.6%	17.6%	16.7%	8.0%	6.7%
By phone with a travel agency	7.8%	7.0%	7.5%	4.6%	4.1%
On site with a travel agency	12.6%	13.2%	11.2%	7.5%	10.4%
On site upon arrival at hotel/restaurant/activity	7.5%	14.9%	17.3%	55.3%	56.7%
Total Web	53.4%	47.6%	45.8%	18.7%	16.1%
Total phone	13.6%	13.5%	12.7%	7.7%	6.4%
Total travel agency	40.0%	37.8%	35.4%	20.1%	21.3%
Total on site	20.1%	28.0%	28.5%	62.8%	67.1%

TABLE 5 – Cross-tabulation analysis of influences on posting of Web content

Web content	Influence of photos/videos by friends/family				Significance (*p*)
	None	Slight	Moderate	High	
Photos/videos of self	36.1%	38.7%	42.8%	51.2%	0.023
Photos/videos of people	24.6%	34.0%	36.0%	46.3%	0.013
Photos/videos of sites	11.5%	19.8%	24.3%	36.9%	0.000
Web content	Influence of positive comments published by tourists				Significance (*p*)
	None	Slight	Moderate	High	
Positive comments vacation package	5.9%	8.9%	8.5%	16.3%	0.016
Positive comments restaurant	2.0%	12.1%	8.5%	13.5%	0.041

Table 6 – Cross-tabulation analysis of resource usefulness by sex and mother tongue

Resource usefulness (trip stage)	Sex		Mother tongue	
	Female	Male	French	English
Facebook (planning)				
Highly			23.0%	22.2%
Not at all			28.3%	36.7%
Do not use			2.7%	8.9%
Significance (*p*)			0.006	
Family/Friends (planning)				
Highly	70.5%	57.7%	59.1%	66.7%
Not at all	3.1%	9.1%	7.0%	6.7%
Significance (*p*)	0.002		0.010	
Family/Friends (choice)				
Highly	66.3%	53.7%	55.1%	61.1%
Not at all	5.6%	10.7%	10.2	7.8%
Significance (*p*)	0.009		0.009	

Table 7 – Cross-tabulation analysis of resource usefulness or influence by foreign family

Resource highly useful/influential	Family outside Canada		Significance (p)
	No	Yes	
Initial planning			
Family and friends	55.9%	70.1%	0.001
Search engines	54.8%	67.5%	
Meta search sites	28.7%	39.1%	
Travel choice			
Family and friends	51.3%	66.9%	0.000
Search engines	44.4%	54.7%	0.001
Meta search sites	25.3%	30.2%	0.019
Decision			
Opinions of friends	40.6%	57.4%	0.000
Opinions of family members	41.4%	59.5%	0.000
Photos/videos by friends/family	24.1%	40.2%	0.001

TABLE 8 – Rank ordered logit model for Web 2.0 alternatives

VARIABLES	(1) raw Exact	(2) odds ratio Exact	(3) odds ratio Breslow approximation	(4) odds ratio Exact
web 2.0 technologies = 2, Flickr	-1.422***	0.241***	0.648***	0.233***
	(0.165)	(0.0398)	(0.0687)	(0.0507)
web 2.0 technologies = 3, Foursquare	-1.528***	0.217***	0.623***	0.171***
	(0.177)	(0.0385)	(0.0682)	(0.0412)
web 2.0 technologies = 4, Google+	-0.132	0.876	0.783**	0.539***
	(0.118)	(0.103)	(0.0777)	(0.0920)
web 2.0 technologies = 5, Picasa	-1.311***	0.270***	0.657***	0.238***
	(0.172)	(0.0463)	(0.0704)	(0.0544)
web 2.0 technologies = 6, Renren	-1.946***	0.143***	0.622***	0.137***
	(0.245)	(0.0350)	(0.0729)	(0.0418)
web 2.0 technologies = 7, Twitter	-1.240***	0.290***	0.656***	0.276***
	(0.140)	(0.0406)	(0.0659)	(0.0522)
web 2.0 technologies = 8, YouTube	-0.408***	0.665***	0.812**	0.536***
	(0.112)	(0.0746)	(0.0754)	(0.0849)
Female * Facebook			0.939	1.647
			(0.167)	(0.649)
Female * Flickr			1.015	1.814
			(0.190)	(0.836)
Female * Foursquare			1.037	1.977
			(0.197)	(0)
Female * Google+			1.288	4.319***
			(0.231)	(1.737)
Female * Picasa			0.966	1.328
			(0.182)	(0.630)
Female * Renren			1	1.014
			(0)	(0.667)
Female * Twitter			1.014	1.545
			(0.184)	(0.662)
Female * YouTube			1.001	2.145*

			(0.179)	(0.853)
Ontario * Facebook			0.734	0.265
			(0.175)	(0.218)
Ontario * Flickr			0.858	0.123**
			(0.220)	(0.118)
Ontario * Foursquare			0.979	0.494
			(0.251)	(0.441)
Ontario * Google+			0.917	0.462
			(0.224)	(0.378)
Ontario * Picasa			1.040	1.047
			(0.271)	(0.995)
Ontario * Renren			1.000	0.668
			(0)	(0)
Ontario * Twitter			0.877	0.284
			(0.215)	(0.245)
Ontario * YouTube			0.864	0.369
			(0.208)	(0.301)
Observations	3,225	3,225	3,027	3,027
Number of groups	604	604	569	569
Pseudo R-squared	0.126	0.126	0.00669	0.152

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

TABLE 9 – Rank ordered logit model for information resources

VARIABLES	(1) raw Exact	(2) odds ratio Exact	(3) odds ratio province Brselow approximation	(4) odds ratio province Exact
final resource = 2, search engines		0.742***	0.843*	0.756**
	(0.0962)	(0.0714)	(0.0749)	(0.101)
final resource = 3, personal travel blogs	-2.052***	0.128***	0.478***	0.200***
	(0.115)	(0.0148)	(0.0465)	(0.0303)
final resource = 4, tourism brochures	-1.726***	0.178***	0.508***	0.229***
	(0.108)	(0.0192)	(0.0484)	(0.0340)
final resource = 5, online travel agency	-1.593***	0.203***	0.526***	0.252***
	(0.107)	(0.0217)	(0.0509)	(0.0372)
Female * Family and friends			1.006	1.137
			(0)	(0)
Female * Search engines			1.013	1.014
			(0.133)	(0.210)
Female * Personal travel blogs			0.716**	0.465***
			(0.107)	(0.116)
Female * Tourism brochures			0.885	0.839
			(0.126)	(0.193)
Female * Online travel agency			0.866	0.797
			(0.124)	(0.182)
Ontario * Family and friends			1.028	0.859
			(0)	(0.350)
Ontario * Search engines			1.142	1.007
			(0.200)	(0.402)
Ontario * Personal travel blogs			1.076	0.565
			(0.222)	(0)
Ontario * Tourism brochures			0.840	0.296***
			(0.167)	(0.107)
Ontario * Online travel agency			1.011	0.515*
			(0.200)	(0.179)

Observations	2,893	2,893	2,732	2,732
Number of groups	627	627	592	592
Pseudo R-squared	0.227	0.227	0.0376	0.236

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1